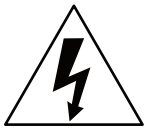
USER MANUAL

Imax
HIGH RESOLUTION 1000TVL CAMERA



The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules & CE Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION : To prevent electric shock and risk of fire hazards:
☞Do NOT use power sources other than those specified.
☞Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

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General Features

● 1000 TV Lines

1.3 MEGA HD ANALOG 1000 TVL combined with SONY EXMOR SENSOR (IMX 138)

● WDR (Wide Dynamic Range)

A powerful and ultra-advanced technology that captures cleaner and superior high resolution picture even where images appear dark because there is a strong back light present.

● DNR (Digital Noise Reduction)

SMART 3D DNR prevents the image blurring of moving objects and activates only when moving objects appear on the scene.

● SMART IR

No saturation image, vivid image in darkness. it makes very sharp video image in darkness.
This technology eliminates saturation of video image of the closer object in darkness by control of the IR sensitivity.

● SENS UP

Sens-Up - Max. up to x32 helps get dark images visible and make it clear images in a low light environment.

● DEFOG

Defog function improve the clarity of images taken in poor conditions such as fog, smoke, rain or snow.

● CVBS (Composite Video Blanking and Sync)

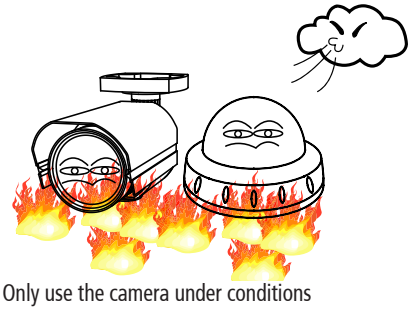
TV System is switchable into 'NTSC' or 'PAL'

● INTELLIGENCE

An extraordinary technology enables HDPRO Imax to become an ultimate analog solution by providing intelligent features based on motion tracking. it strengthens crime prevention & detection.

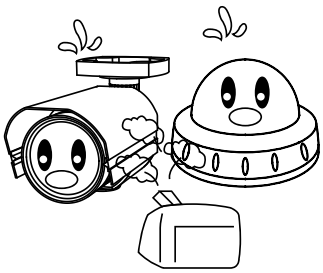
Precautions

Do not install the camera in extreme temperature conditions.



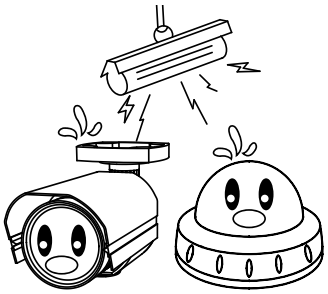
Only use the camera under conditions where temperatures are between -10°C and +50°C. Be especially careful to provide ventilation when operating under high temperatures.

Do not install or use the camera in an environment where the humidity is high.



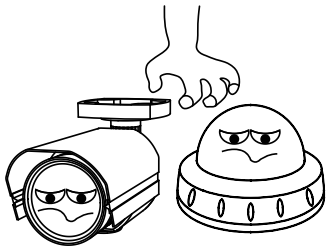
Do not install or use the camera in an environment where the humidity is high.

Do not install the camera under unstable lighting conditions.



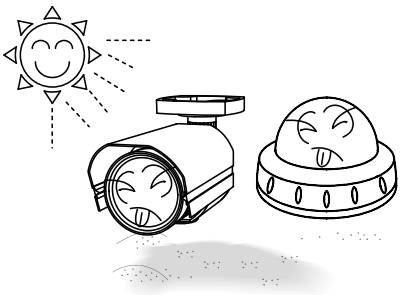
Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.



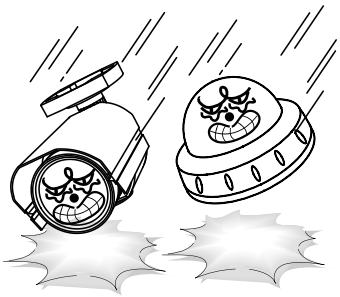
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Never keep the camera pointed directly at strong light.

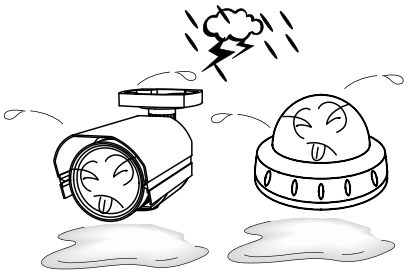


It can cause malfunctions to occur.

Do not drop the camera or subject it to physical shocks.

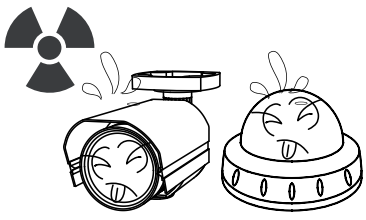


Do not expose the camera to rain or spill liquids on it.



If it gets wet, wipe dry immediately. Liquids can contain minerals that corrode the electronic components.

Do not expose the camera to radioactivity.



If exposed to radioactivity the CCD will fail.

NOTE

* If the camera is exposed to spotlight or object reflecting strong light, smear or blooming may occur.

* please check that the power satisfies the normal specification before connecting the camera.

Safety Instructions

Precautions for use

◑ This camera should be installed by qualified personnel only

◑ There are no user serviceable parts inside

◑ Do not disassemble this camera other than to make initial adjustments

◑ Use appropriate low voltage power cable to prevent fire or electrical shock

◑ Please insure that your installation area can support the weight of the camera

Please handle this camera carefully :

◑ Do not use a strong or abrasive detergent when cleaning the camera

◑ Do not expose the camera to direct sun

◑ Do not install camera in places where humidity is high

◑ Do not install near cooling or heating device

◑ Do not expose camera to rain or moisture

How to Set Up the camera menu

● Setup Menu

LENS	DC	MODE	INDOOR / OUTDOOR/ DEBLUR		
		RETURN			
	MANUAL	MODE	NORMAL / DEBLUR		
		RETURN			
EXPOSURE		BRIGHTNESS	0 ~ 20		
		SHUTTER	AUTO		
			MANUAL	SPEED	1/60 ~ 1/60000
				RETURN	
			FLICKER		
		SENS-UP	OFF / X2 ~ X32		
		AGC	0 ~ 20		
		RETURN			
WHITE BAL	ATW				
	AWB				
	AWC-SET				
	MANUAL	KELVIN	LOW / MIDDLE / HIGH		
		R-GAN	0 ~ 20		
		B-GAN	0~ 20		
		RETURN			
BLACKLIGHT	OFF				
	HLC	LEVEL	0 ~ 20		
		MODE	ALL DAY / NIGHT ONLY		
		RETURN			
	BLC	H-POS	0 ~ 20		
		V-POS	0 ~ 20		
		H-SIZE	0 ~ 20		
		V-SIZE	0 ~ 20		
		RETURN			
	WDR	WEIGHT	LOW / MIDDLE / HIGH		
		RETURN			

How to Set Up the camera menu

● Setup Menu

DNR	OFF			
	LOW			
	MIDDLE			
	HIGH			
DAY&NIGHT	AUTO	SMART IR	0 ~ 20	
		AGC THRES	0 ~ 20	
		AGC MARGIN	0~ 20	
		DELAY	LOW / MIDDLE / HIGH	
		RETURN		
	COLOR			
	B/W	SMART IR	0 ~ 20	
		RETURN		
	EXTERN	SMART IR	0 ~ 20	
		EXTERN S/W	LOW/HIGH	
		DELAY	LOW/MIDDLE/HIGH	
		RETURN		
IMAGE		SHARPNESS	0 ~ 10	
		GAMMA	0.45 ~ 0.65	
		PEDSTAL	0 ~ 20	
		COLOR GAIN	0 ~ 20	
		MIRROR	OFF / ON	
		FLIP	OFF / ON	
		RETURN		
SYSTEM		COM.	CAM ID	0 ~ 255
			BAUDRATE	2400 / 4800 / 9600 / 57600 / 115200
			RETURN	
		VIEW ANGLE	WIDE 4 : 3	
			WIDE 16 : 9	XY ADJUST
			NORMAL	XY ADJUST
		CVBS	NTSC / PAL	
		RESET	ON	PUSHING
		RETURN		

How to Set Up the camera menu

● Setup Menu

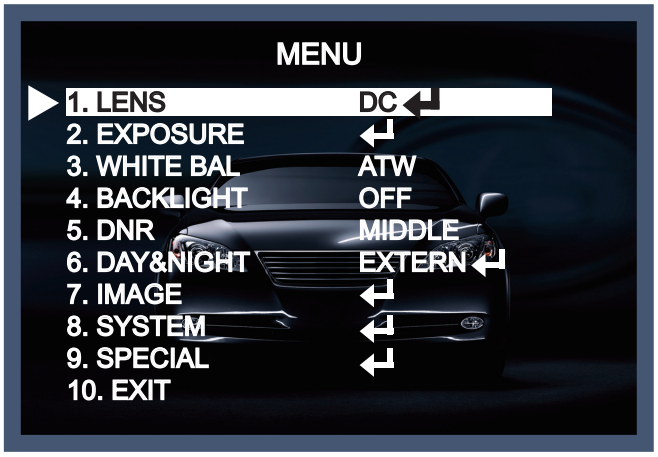
SPECIAL		D-ZOOM	1.0X ~ 8.0X				
		D-WDR	OFF / LOW / MIDDLE / HIGH				
		DEFOG	OFF				
			ON	MODE	AUTO		
					MANUAL		
				LEVEL	LOW		
					MIDDLE		
					HIGH		
				RETURN			
		SHADING	OFF				
			ON	WEIGHT	0 ~ 100%		
				RETURN			
			OFF				
		PRIVACY	ON	ZONE NUM	0 ~ 15		
				ZONE DISP	ON / OFF		
				H-POS	0 ~ 40		
				V-POS	0 ~ 32		
				H-SIZE	0 ~ 40		
				V-SIZE	0 ~ 32		
				Y LEVEL	0 ~ 20		
				CR LEVEL	0 ~ 20		
				CB LEVEL	0 ~ 20		
				RETURN			
		INTELLIGENT	MTN TRACKER	ON	DET . SETTING	SENSITIVITY	0 ~ 20
						OBJ KEEP	LV 0 ~ LV 60
						MOTION EST	0 ~ 20
						SIGNAL OUT	OFF / ON
						RETURN	
					WINDOW TONE	0 ~ 6	
					WINDOW ZONE	0 ~ 3	
					WINDOW USE	OFF / ON	
					DET H-POS	0 ~ 40	
					DET V -POS	0 ~ 32	
					DET H - SIZE	0 ~ 40	
					DET V - SIZE	0 ~ 32	
					RETURN		
			ALARM	ANTI-SHIFT	OFF / ON		
				SHIFT SCALE	0 ~ 20		
				ANTI-BLOCK	OFF / ON		
				BLOCK SCALE	0 ~ 20		
				RETURN			
			QUICK ZOOM	MOVING	0 ~ 240 sec		
				ZOOM IN	0 ~ 240 sec		
				STANDBY	0 ~ 240 sec		
				SYNCHRONOUS	OFF / ON		
				TRACKING	OFF / ON		
				REPEAT	OFF ON		
				RETURN			
			RETURN				
EXIT							

MENU SET UP

Menu setting can be selected by the button inside the camera.

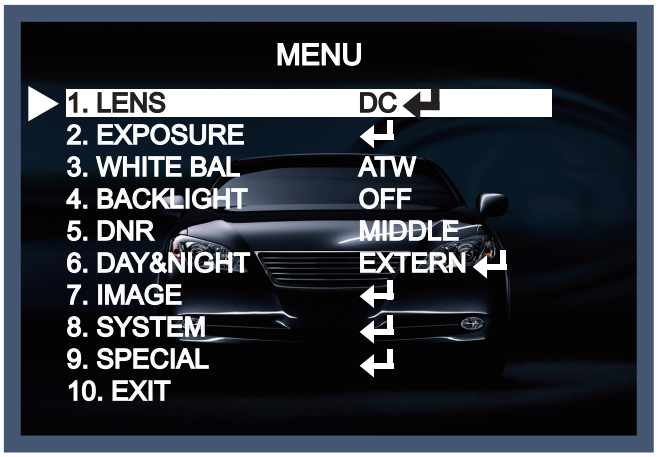
1. Press the set button.

* The Set Up menu will be displayed on the monitor.



2. Move and select the required function using the Up and Down button.

* Move the triangular indicator Up or Down to select the desired feature by pressing the Up or Down button.



3. Change menu settings using the Left or Right button.

   * Available values or Status are displayed by pressing the Left or Right buttons.

     Press the button until desired value / status is displayed.

4. After Changing the setting move the arrow indicator to EXIT and press the

   SET button to EXIT.

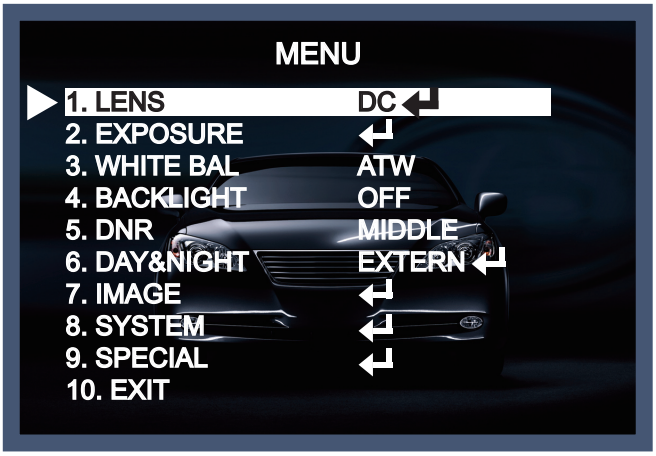
NOTE

* Move to the available submenu by moving ↵ arrow to desired feature.
* Submenu is not available when this symbol displayed "---".

1. LENS

This function is to adjust the brightness of the monitor.

1. Move the triangular indicator to LENS using the Up and Down buttons on the Set Up menu screen.
2. Select the desired lens type by pressing the Left of Right button.



NOTE

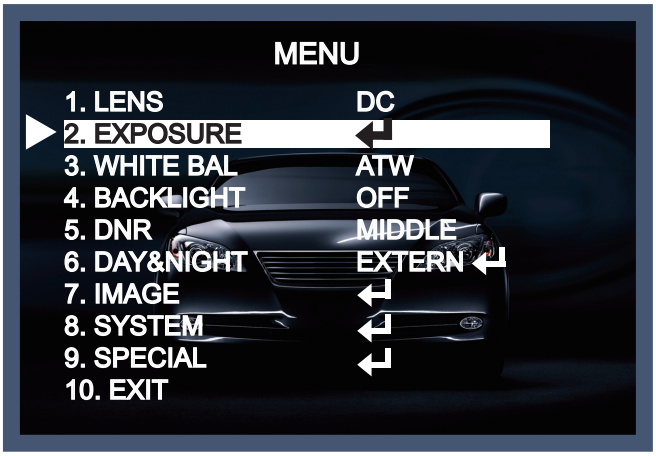
* On DC mode, you can select INDOOR, OUTDOOR, or DEBLUR depending on the installation environment.

* On MANUAL mode, you can select NORMAL or DEBLUR depending on the installation environment.

2. EXPOSURE

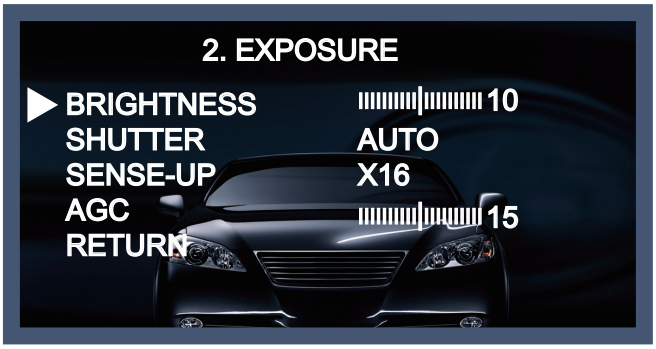
On this manu, users can control exposure by selecting one of modes (Brightness, Shutter, Sens-up, AGC)

1. Move the triangular indicator to EXPOSURE on the SETUP menu screen using the Up and Down button
2. Select the desired mode using the Left or Right buttons.

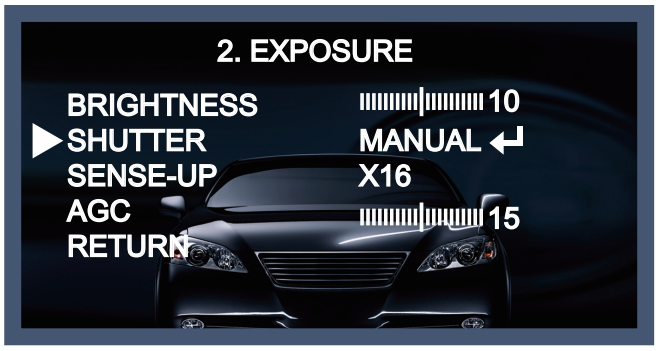


◆ EXPOSURE

→ BRIGHTNESS : It is used to adjust overall brightness level.
(BRIGHTNESS : 0 ~ 20 // default value : 10)

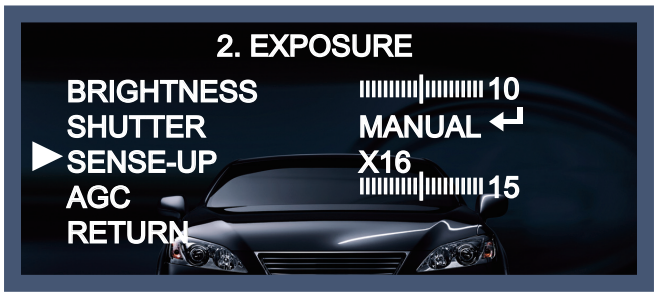


→ SHUTTER : Users adjust electronic shutter speed by selecting one of modes(AUTO, MANUAL, FLICKER).

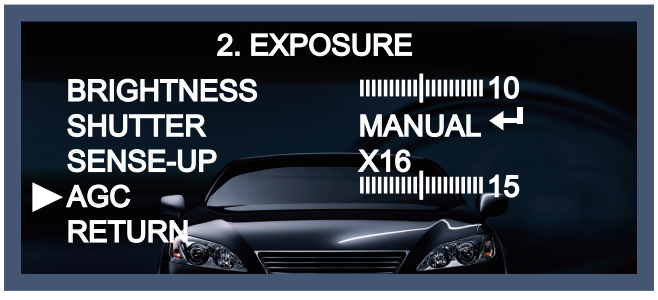


Manaul mode : shutter speed is adjustable from 1/60 up to 1/60,000.

→ SENSE-UP : The brighter image can be displayed by operating digital slow shutter speed in low light environment.
(digital slow shutter : x2 ~ x32 // default value : x16)



→ AGC : the brighter image can be displayed by adjusting AGC(Auto Gain Control) level.
(AGC : 0 ~ 20 / default : 15 // default value : 15)

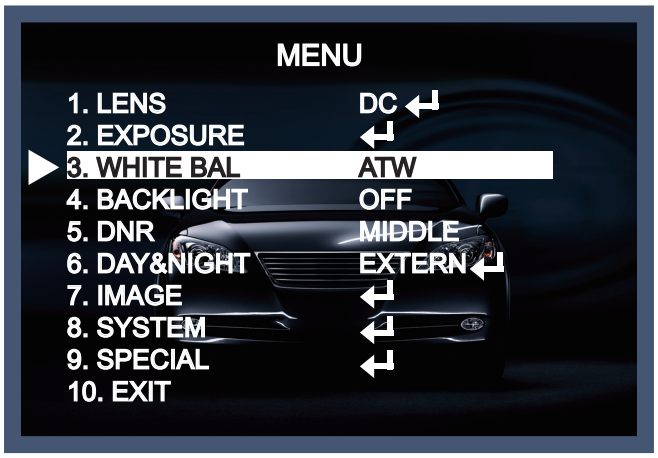


3. WHITE BALANCE

Use this function when the color adjustment of a screen is needed.

1. Move the triangular indicator to WHITE BAL on the SETUP menu screen using the Up and Down button.

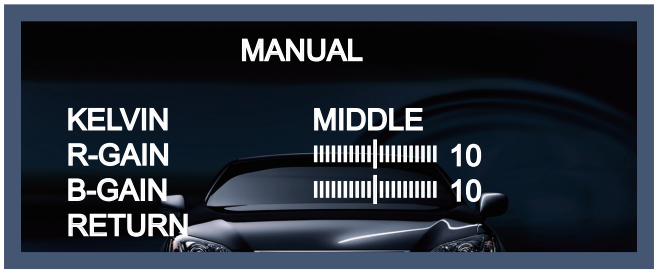
2. Select the desired mode by using the left or Right button.



Use the appropriate mode according to your purposes among these three modes.

* ATW : Use this mode when the color temperature is from 1,800K to 10,500K.
* AWB : The function to search for the color which is matched well with the ambient environment. This be used when the color temperature is from 3,000K to 7,000K.
* AWC→SET : After letting camera focus on the blank white paper to the best condition of current lighting environment, press the SET button. If the lighting condition is changed, Re-adjustment should be needed.

* MANUAL : Manual compensation make the more detailed control possible. First, after adjusting the white balance using the ATW or AWB mode, change the mode into the manual compensation mode and then press Set button. While looking at the color change of the subject seen on the screen after setting up the proper color temperature, increase the each value of the blue and the red.



NOTE

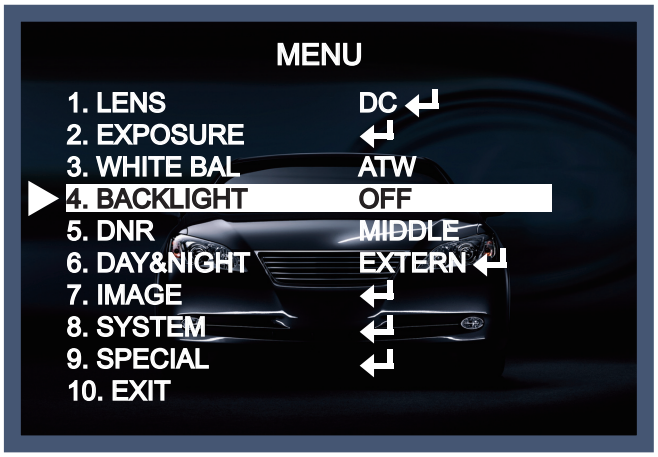
The White Balance may not be worked properly in the following conditions. If this doesn't work, use the AWB mode.

* When there is a very high color temperature in the circumstances of the subject. (for example, clear sky, Sunset)
* It is very dark.
* If the camera is headed to the fluorescent light directly or if there is a drastic lighting change, The operation of White balance may become unstable.

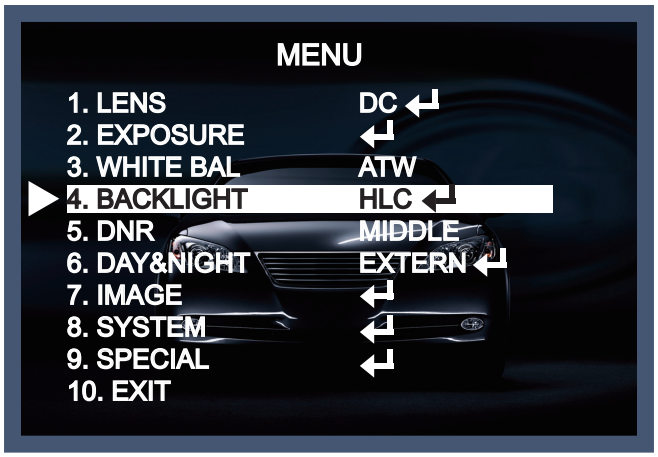
4. BACK LIGHT

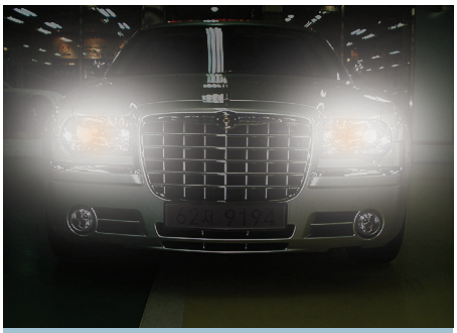
On this menu, back light image can be compensated by users selecting one of modes (HLC, BLC, and WDR).

1. Move the triangular indicator to BACKLIGHT on the SETUP menu screen using the Up and Down button
2. Select the desired mode using the Left or Right buttons.



◆ HLC (Highlight Light Compensation) : When there is a car head light turned on at the entrance of the gas station or in some place in the parking lot, the numbers of the car plate can be recognized by blocking only the light from the car headlight. At the area is set up specifically, you can recognize the car plate numbers by blocking the strong light signal.



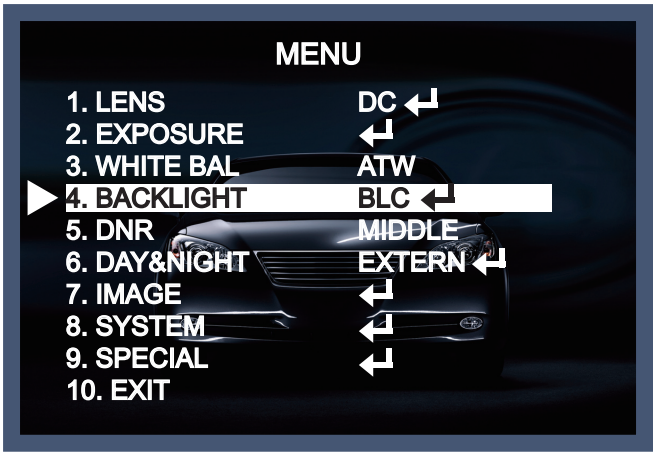


Nomarl

HLC

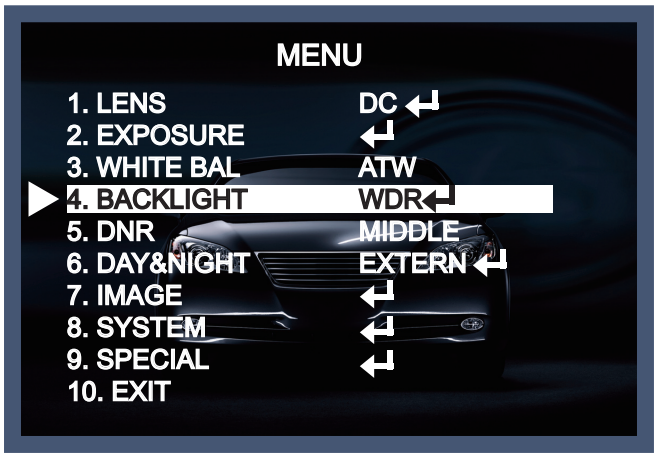
◆ BLC (Back Light Compensation) : The camera with 3D-DNR provides the intelligent light level control to overcome strong backlight conditions.

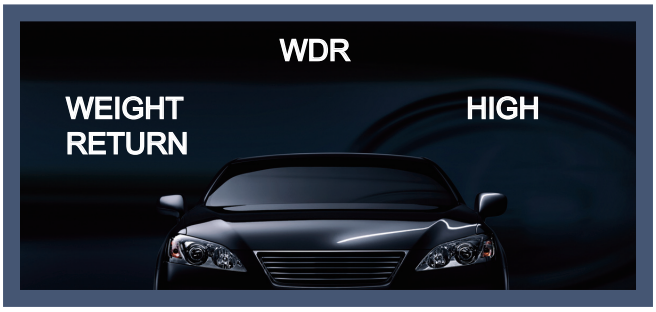
→ BLC : The set up area can be seen vividly by the user who set up the desired area to compensate the back light directly according to the installation environment.



H-POS	Adjust the H(Horizontal)-position of the BLC area.
V-POS	Adjust the V(Vertical)-position of the BLC area.
H-SIZE	Adjust the H(Horizontal)-size of the BLC area.
V-SIZE	Adjust the V(Vertical)-size of the BLC area.

◆ WDR(wide dynamic range) : the function is intended to provide clear images even under back light circumstances where intensity of illumination can vary excessively, namely when there are both very bright and very dark areas simultaneously in the field of view of the camera.
(To adjust WDR level, select the LOW, MIDDLE, HIGH by pressing the left or the right button)





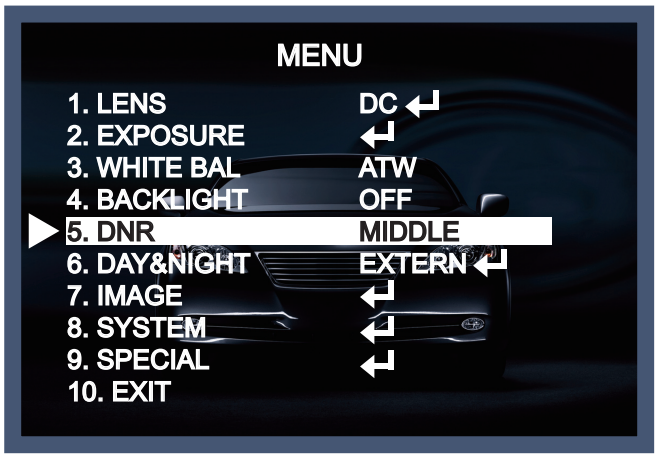
WDR OFF

WDR ON

5. DNR

This function makes the noise of the low light background decrease and is a highlighted feature.

1. Move the triangular indicator to DNR on the SETUP menu screen using the Up and Down button
2. Select one of modes(OFF, LOW, MIDDLE, HIGH) to use DNR by pressing the Right or Left button.



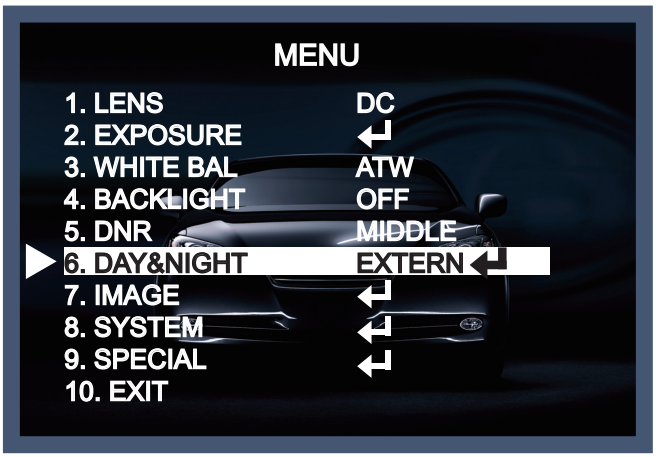
NOTE

* If DNR function is activated, digital noise om image get reduced.
The higher the compensation proportion raises, the better noise cancellation effect is.
However, high DNR value might cause ghost effect on image to occur.

6. DAY&NIGHT

You can change the color mode of color or black / white by setting up the mode.

1. Select DAY&NIGHT using the Up or Down button on the Set Up menu screen.
2. Select one of modes (EXTERN, AUTO, COLOR, B/W) using the Left or Right buttons.



◆ EXT : it can change into COLOR or B/W mode automatically through the connection with the ground terminal. Users can adjust SMART-IR level (0 ~ 20), EXTERN S/W Level, and working time of the D/N filter.

◆ Auto : Automatically, It shifts into the color mode in the bright environment and the B/W mode in the low light condition. It can adjust the delay time, starting brightness and end brightness according to the ambient conditions by pressing the Set button.

* SMART IR : It is used to compensate IR saturation (0 ~ 20)
* AGC THRES : AGC threshold level (0 ~ 20)
* AGC MARGIN : AGC D/N margin level (0 ~ 20)

◆ COLOR : Making the video output color always.

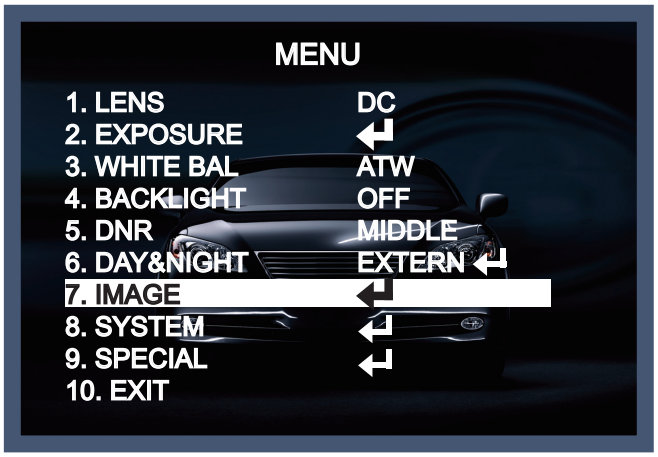
◆ B / W : Making the video output B/W always. By selecting the color signal On or Off, this lets the burst signal be disappeared or not.

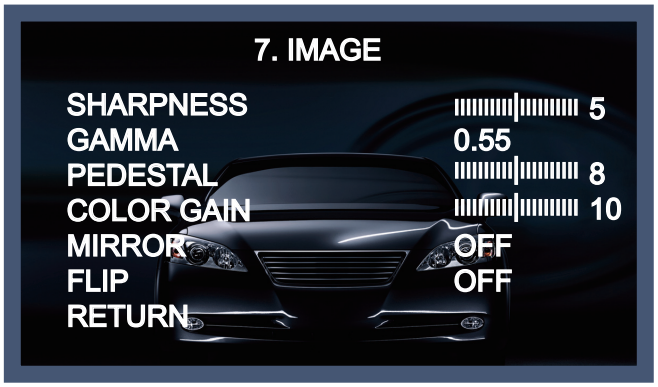
7. IMAGE

This can be used when you want to select the additional function control.

1.When the SETUP menu is displayed, select IMAGE using the Up and Down button.

2. Select one of the mode using the Left or Right buttons.





◆ IMAGE

→ SHARPNESS : the outline of an image becomes sharp and more distinct as the level of sharpness increases.
It has better be used to adjust the value to the proper one depending on a sort of image.
(SHARPNESS : 0 ~ 20)

→ GAMMA : Gamma value is adjustable (GAMMA : 0.45 ~ 0.65)

→ PEDSTAL : Pedstal value is adjustable (PEDSTAL : 0 ~ 20)

→ COLOR GAIN : Color gain value is adjustable (COLOR GAIN : 0 ~ 20)

→ MIRROR : The image of the monitor is reversed horizontally.

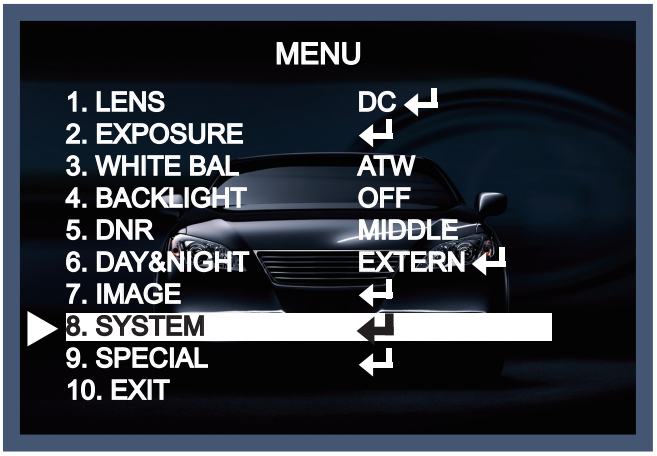
→ FLIP : The image of the monitor is reversed vertically.

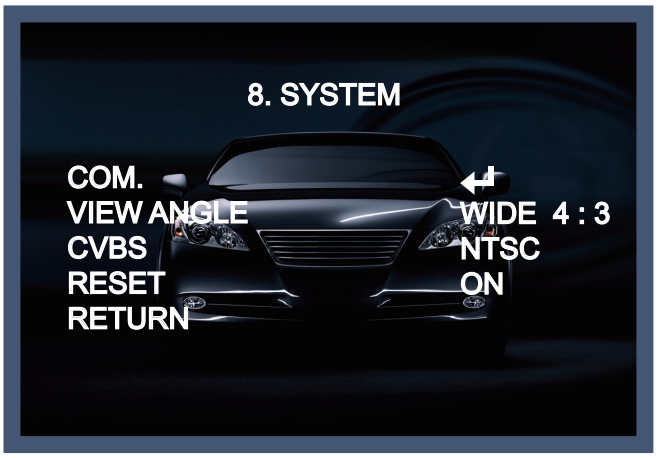
8. SYSTEM

This can be used when you want to select the additional function control.

1.When the SETUP menu is displayed, select SYSTEM using the Up and Down button.

2. Select one of the mode using the Left or Right buttons.



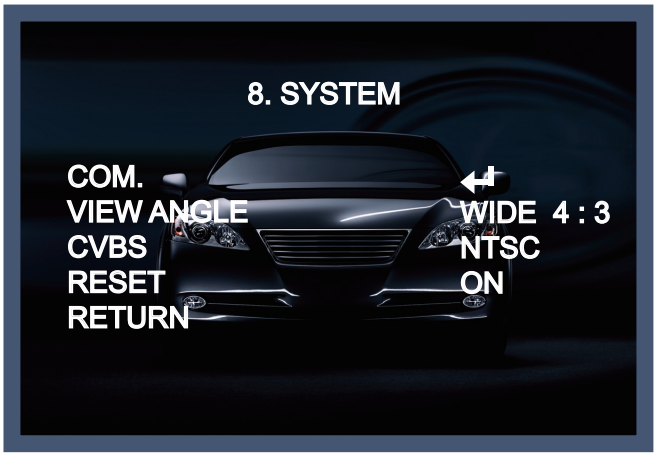


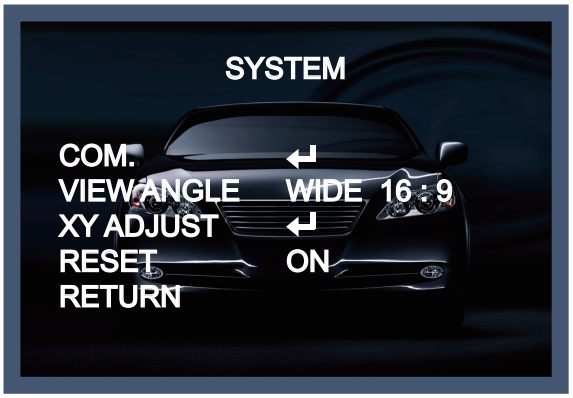
◆ SYSTEM

→ COM : this menu is used for RS-485 communication.

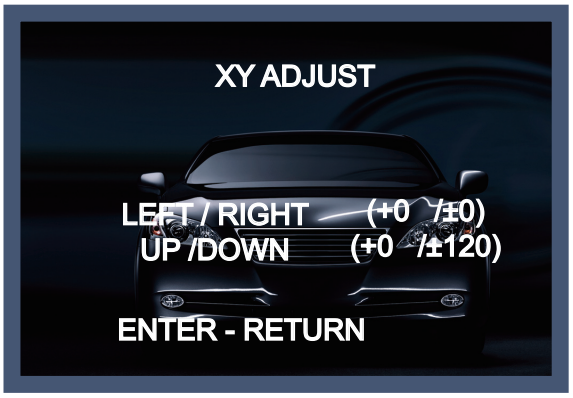
Users are able to select 'CAM ID (0 ~ 255)' and 'BAUDRATE (2400 / 4800 / 9600 / 57600 / 115200)'.

→ VIEW ANGLE : users are able to adjust aspect ratio by selecting 'WIDE 4:3', 'WIDE 16:9' or 'NORMAL' depending on monitor aimed for surveilance. (default value : WIDE 4:3)



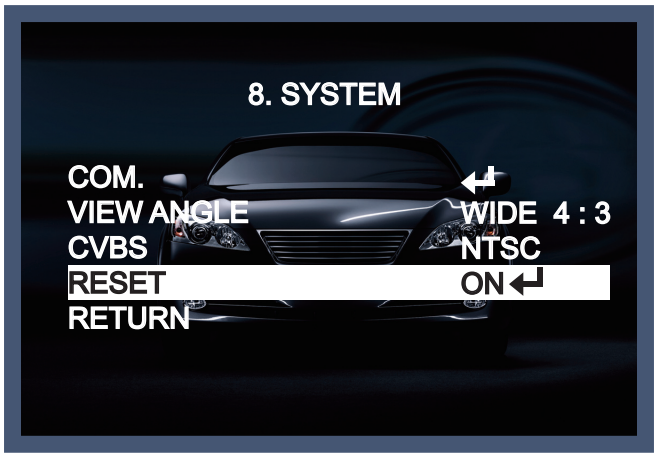


For further adjustment, please enter into 'XY ADJUST' on 'WIDE 16:9' or 'NORMAL'.



→ CVBS : TV system is manually switchable to 'PAL' or 'NTSC' on CVBS(Composite Video Blanking and Sync).

→ RESET : It is used to turn into the factory default setting values. Press the button for 2~3 seconds.

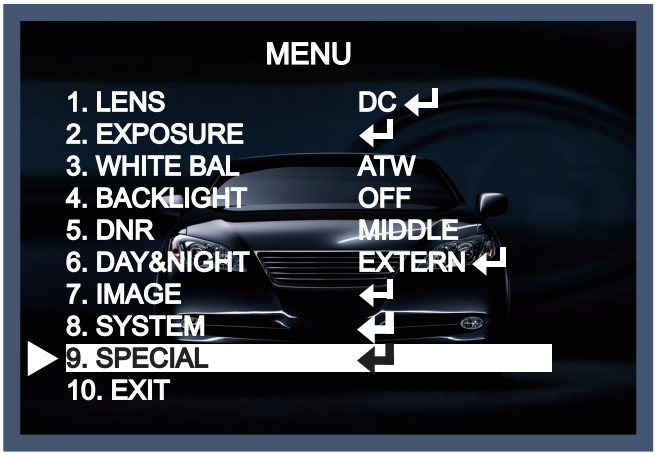


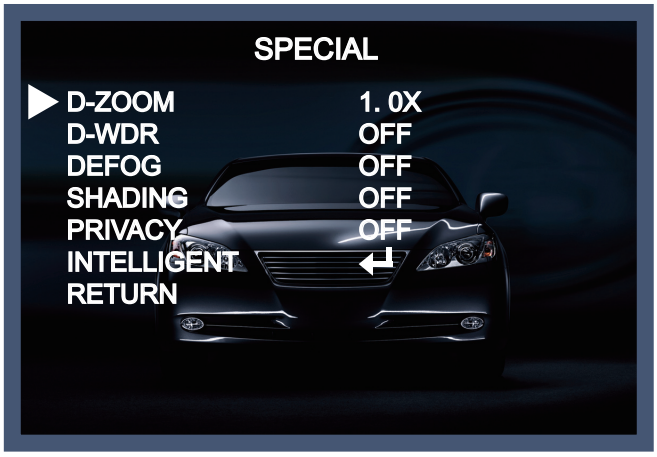
9. SPECIAL

This can be used when you want to select the additional function control.

1.When the SETUP menu is displayed, select SPECIAL using the Up and Down button.

2. Select one of the mode using the Left or Right buttons.



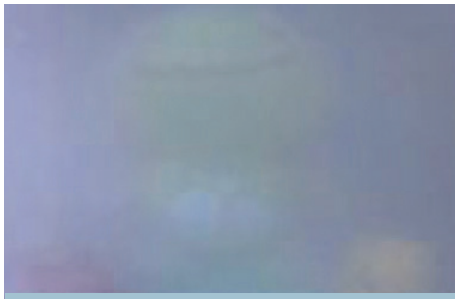


◆ SPECIAL

→ D-ZOOM : diginal zoom supports up to x8 available (x1 ~ x8)
The higher the digital zoom magnification is, the lower the resolution is.

→ D-WDR : This camera which is using 3D-DNR DSP provides intelligent light level control to overcome even strong backlight conditions. (OFF / LOW / MIDDLE / HIGH)

→ DEFOG : This function helps to recognize the object in a foggy or dusty weather condition.

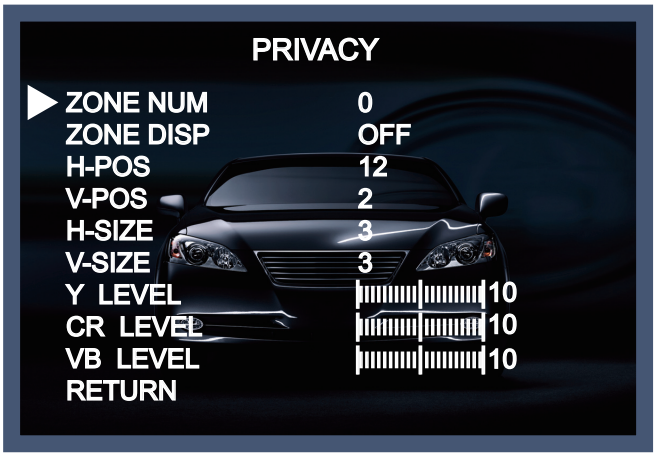


DEFOG OFF

DEFOG ON

→ SHADING : It is used to increase brightness in case angle of lens set as wide cause darker image on both sides than that on the center.

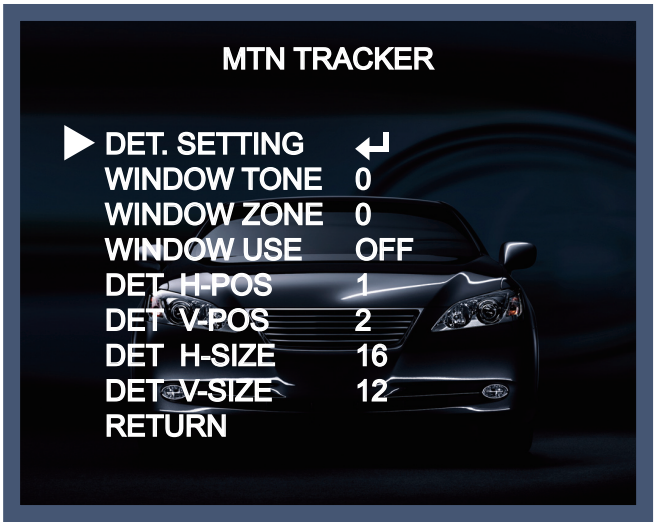
→ PRIVACY : This is used to hide certain areas on the monitor. You can designate each different 15 area. The size of a designated area can be adjusted.



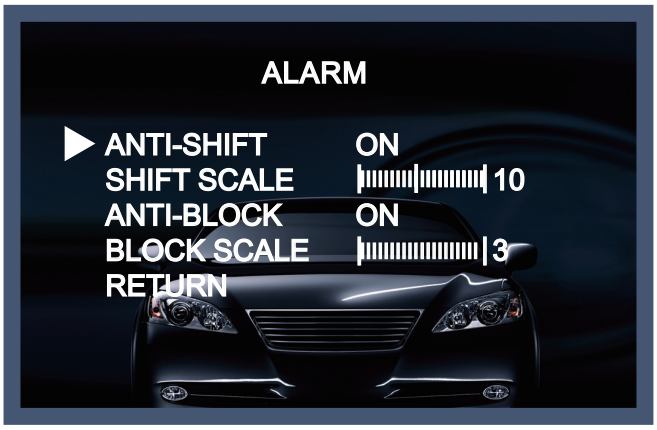
→ INTELLIGENT : It is used for crime prevention & detection by providing intelligent functions based on motion tracking.

◆ INTELLIGENT (MTN TRACKER, ALARM, QUICK ZOOM)

1) MTN TRACKER : it is used to adjust a certain area for motion tracking.



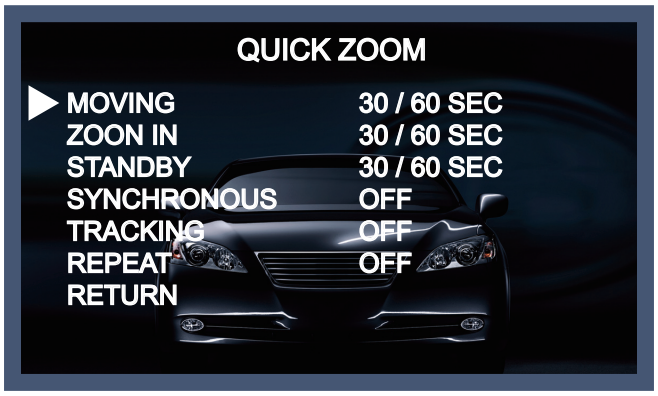
2) ALARM : it is used to set 'ANTI-SHIFT' or 'ANTI-BLOCK' based on
motion tracking. scale level of these functions are adjustable.

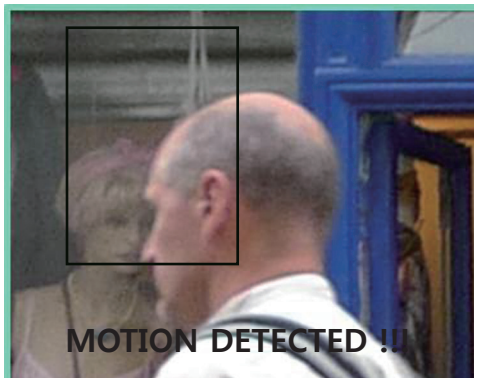


* ANTI-SHIFT : If someone intends to change or shift camera direction by their hands or objects,
it will be automatically detected by a warning message(SHIFTING DETECTED !!!)
on monitor.

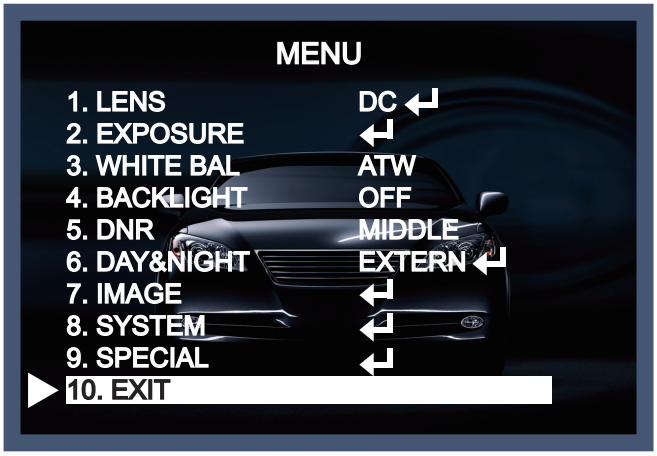
* ANTI-BLOCK: If someone intentionally block the front of camera by hands or spray, etc.,
it will be automatically detected by a warning message(BLOCKING DETECTED !!!)
on monitor.

3) QUICK ZOOM : Digital 'zoom-in' is operated to precisely detect objects when objects get in a designated motion-detection area. The area setting is available on MTN TRACKER(P. 27).





10. EXIT



Press 'EXIT' button to save the current settings and exit the setup menu.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE
Nothing appears on the screen.	☞Check the power cable, power supply output and video connection between the camera and monitor.
The image on the screen is dim.	☞Are the camera lens or the lens glass dirty? Clean the lens / glass with a soft clean cloth. ☞Adjust the monitor controls, as required. ☞If the camera is facing a very strong light, change the camera position. ☞Adjust the lens focus.
The image on the screen is dark.	☞Adjust the contrast control of the monitor. ☞If there is an intermediate device, correctly set the 75Ω/Hi-z.
The camera is not working properly and the surface of the camera is hot.	☞Check the camera is correctly connected to an appropriate regulated power source.
Motion Detection is not activated.	☞Has MOTION DET been set to ON in the menu? ☞Has MD AREA been properly defined?
The color of the picture is not correct.	☞Check the settings in WHITE BALANCE menu.
The image on the screen flickers.	☞Make sure that the camera isn't facing direct sunlight or fluorescent lighting. If necessary,change the camera position.
The SENS-UP does not work.	☞Check that the AGC setting in the EXPOSURE menu is't set to OFF. ☞Check the EXPOSURE menu and make sure SHUTTER is set to------.

- MEMO -